

AN INVESTIGATION OF TWO TEACHING APPROACHES IN  
ELEMENTARY SCHOOL PHYSICAL EDUCATION  
COLLEGE METHODS COURSES

by

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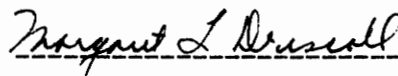
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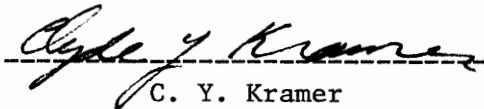
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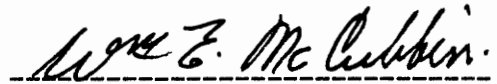
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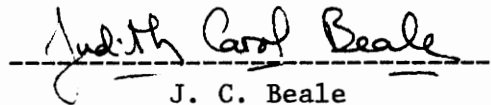
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## Chapter 1

### INTRODUCTION

According to Allport, the problem of selecting the most appropriate learning situation within the classroom has been a question for at least eight decades. In identifying two basic approaches which existed over eighty years ago, he stated that teachers were attempting to expedite learning through, as then described, modern tenets of psychology of learning which included such theories as self-motivation, self-reliance, self-confidence and individual meaningfulness. In addition, much was to be discovered concerning the makings of various human interaction in face-to-face group exchanges. Allport also said that two or more heads together may produce something great and even new as group discussions often yield constructive results bringing new points of view upon the thought habits of the participants (Allport, 1923).

More recently, Domino has stated that both educators and researchers are still concerned with maximizing academic achievement on the college level. Domino indicated that his investigations into the literature concerning teaching approaches have revealed that little empirical work has yet taken place which attempts to systematically identify selected aspects which directly influence academic achievement (Domino, 1973).

## STATEMENT OF THE PROBLEM

The subcommittee of the Elementary School Physical Education Commission of the American Association of Health, Physical Education and Recreation published a statement in 1969 which proclaimed a philosophy concerning the elementary school physical education program. The subcommittee stated that much of the quality inherent within the elementary school physical education program depended upon the teacher's knowledge and appreciation of movement activities as they contribute to each child's total growth and development at the proper time. In addition, the subcommittee stated that in order for the program to be compatible with the needs of children, the teachers should have an understanding of teaching methods, teaching strategies, the learning processes and factors which facilitate learning (American Association for Health, Physical Education and Recreation, 1969).

The Commonwealth of Virginia's Certification Regulations require that teacher training institutions offer elementary education majors credit in undergraduate work in physical education appropriate for the elementary school level (Commonwealth of Virginia, State Board of Education, 1968). This requirement is of major concern to college instructors teaching the elementary school physical education methods classes. It is a challenge to present in one methods course the information that will permit a student to acquire understanding and knowledge of the teaching of physical education to elementary school age children. How to best present a methods course in one semester is a problem that needs to be confronted by the college instructor. Various



teaching approaches such as laboratory work involving actual participation, lecture and/or discussion seem to be the alternatives most frequently considered and attempted by the instructors (Rimmac, 1974).

McKeachie, in discussing his theories concerning teaching methods on the college level, expressed that the lecture method was often not conducive to maximum learning unless circumstances were unusual such as having a dynamic speaker or popular topic. On the other hand, he stated that from a theoretical standpoint the activity or laboratory type of approach which lends itself to sensorymotor experiences was a more superior method for developing appreciations and understandings (McKeachie, 1969).

Gagné stated that "some learning is almost bound to occur, regardless of the teacher's decisions," and that the teacher's duty is that of making the instruction as good as possible. Gagné also viewed each kind of learning outcome as lending itself to separate consideration; each outcome calling for varied problems to be solved. Therefore, somewhat different arrangements of the events of instruction may be required (Gagné, 1975).

Educators and researchers alike have an investment in gaining the maximum academic achievements on all levels of learning, including college instruction. Little empirical work has been initiated which attempts to place the above aspects of learning on the college level in a systematic way for directly influencing such achievement (Domino, 1973).

Elementary school classroom majors at Longwood College are required to enroll in an elementary school physical education methods course for which three credits are given toward the teaching certificate. Sometimes, the decision has to be made to approach the course by utilizing a lecture-discussion means; other times the laboratory-activity method is utilized. The material has to be presented within one semester; therefore, it would be desirable to present the contents with the approach which would demonstrate the greater gain in knowledge and understanding among the students.

#### PURPOSE OF THE STUDY

This study was designed to investigate the relative effectiveness of two different teaching approaches in elementary school physical education methods classes to college level elementary education majors. The two methods which were studied were the laboratory-activity method and the lecture-discussion method.

#### VALUE OF THE STUDY

The value of this investigation was to determine whether a lecture-discussion or a laboratory-activity method was more effective in teaching a college physical education methods course for elementary education majors. If one method was found to be more effective, it would enable methods teachers to offer a course utilizing the approach which attempts to yield more opportunity to the students for gaining the most amount of knowledge and understanding.

Other academic disciplines have also shown a similar concern in attempting to discover which teaching methods might provide opportunities for students to obtain optimum understanding and knowledge of subject matter. For example, in order to discover which approach might reveal the better results, the University of Utah's psychology faculty had investigated the test scores of students following both the lecture-discussion and personalized instruction courses (Born and others, 1972). Elementary Science Education methods courses were structured for studying various approaches to learning at Colorado State College. Such structuring was done in order to investigate whether the lecture-discussion or the laboratory-activity method might reveal the greater effects upon cognition, memory, divergent production, convergent production and evaluation (McCormack, 1971). The lecture method has been questioned by researchers involved in the teaching of Oral Pathology classes in the College of Dentistry at the University of Kentucky (Rovin, LaLonde, and Haley, 1972). Increases in knowledge were compared in traditional and behavioral college teaching at the University of Florida with a major concern on developing improved teaching technologies in the field of human development (Alba and Pennypacker, 1972).

If other disciplines with similar concerns could utilize their most ideal approach, the student may have the advantage of gaining the optimum in understanding and knowledge within the confines of course offerings and limited time. If one method does appear to be superior over the other, more emphasis can be placed upon the approach

within the situation described in this particular study. Such a finding might also assist when scheduling in over-crowded situations when both the classroom and laboratory are involved and only one may be chosen for class sessions.

#### NULL HYPOTHESIS

The following null hypothesis concerning the teaching of elementary school physical education methods was expected to be true:

The increase of knowledge and understanding of an elementary school physical education course offering will not be significantly different between a laboratory-activity college methods class and a lecture-discussion methods class as revealed through post-test scores.

#### DEFINITION OF TERMS

Certain terms are identified for clarification within this investigation. The terms are defined for purposes herein and may be found to vary with other definitions existing elsewhere.

1. Physical Education Specialist: An individual who has earned a baccalaureate degree from an accredited college or university with emphasis in teaching physical education on the elementary school level (Commonwealth of Virginia, 1968).

2. Classroom Teacher: An individual who has earned a baccalaureate degree from an accredited college or university with an emphasis in teaching in the elementary school program (Commonwealth of Virginia, 1968).

3. Classroom Lecture-Discussion Approach: A methods course taught in a classroom during which both teacher and student exchange takes place with the teacher setting the primary pace (McKeachie, 1969).

4. Laboratory or Activity Participation Approach: A methods course taught within the gymnasium or other activity area through the use of individual and/or group participation among the students themselves as guided by the instructor (McKeachie, 1969).

#### DELIMITATIONS

The investigation was limited to:

1. Two elementary school physical education methods classes for elementary education majors taught at Longwood College, Farmville, Virginia.
2. Both classes were taught within one semester only.
3. Scheduling did not permit random assignment of subjects to groups.
4. Comparison of the two classes through an unvalidated objective-type examination.

#### SUMMARY

The remaining work involved within this investigation is organized as follows: Chapter 2 presents findings in related research and professional literature; Chapter 3 describes the design of the research method as well as the technique used; Chapter 4 presents the

analysis and results of the data as well as a discussion of the results of the entire investigation; and Chapter 5, the concluding chapter, presents the summary, conclusions and recommendations for future study.

## Chapter 2

### REVIEW OF RELATED LITERATURE

The purpose of the present study was to investigate which method, the lecture-discussion emphasis or the laboratory emphasis approach, might assist students more in gaining the most understanding and knowledge for the teaching of elementary school physical education. The majority of the resources included within this study are those references as found through the Comprehensive Dissertation Query Service Xerox University Microfilms of Ann Arbor, Michigan, submitted December, 1976. Key words controlling the search were "Elementary, Physical Education, Teach;" "Elementary, Physical Education, Teaching;" "Elementary, Physical Education, Teachers;" and "Physical Education."

A second resource was also utilized: the Computer-based Literature Search Service of Virginia Polytechnic Institute and State University which subscribes to the Lockheed's Dialog System and Systems Development Corporation's ORBIT SYSTEM. Key words for the search were "Teacher Education," "Physical Education," "Elementary Grades," "Teacher Education in Physical Education in Elementary Grades," "Lecture," "Laboratory Training," "Activity Learning," "Elementary Grades," "Elementary Education," and "Elementary Schools." The literature which was found to be pertinent to the present investigation is presented in two major areas: 1) Related Studies involving varied teaching approaches on the college level: descriptions of studies in numerous disciplines describing the findings which may be pertinent to

this investigation; and 2) Teacher Training, especially professional preparation in elementary school physical education both for the classroom teacher and the specialist: a description of present theory and practice by some of the current programs and individuals within the United States.

#### RELATED STUDIES

Researchers in the field of education have made attempts to uncover which teaching and/or learning approaches might be most appropriate. Subject areas have been studied with emphasis upon individualized learning approaches while a few have investigated various other classroom and laboratory approaches.

Born and others compared what they titled personalized instruction, described as a procedure where the individual proceeds with structured and sequenced units at his own rate within the time limits provided in a semester's course, with the lecture method involving sixty college students enrolled in a Psychology of Learning course at the University of Utah. Subjects were rank ordered according to grade point averages and then were randomly assigned from each successive rank order set to one of four class sections: 1) A lecture-discussion section where students had an option of attending classes three times per week and were involved in lectures designed to supplement reading assignments; 2) A Keller section, described as a personal course in psychology involving the study of human behavior, where students regularly met three times per week with proctors available to



assist in giving tests and study units and to answer any questions. Each student had to assume the responsibility of thoroughly knowing each unit by taking a test on each one until a perfect score was made. Students progressed at their own rate except for having to have all material completed by mid-term and final exams; 3) Modified Keller, section not described other than the procedure given herein, similar to the Keller section except that students had the option of determining the size of the units to be covered until eventually all material was completed. Students in this section could also earn an extra one hundred points through experiments, reading and writing a paper, or other related projects; and 4) a rotating section where students were equally exposed to all of the above three methods (Born and others, 1972).

Short answer and essay examinations were given to all students at the same time during the mid-term and final examination sessions. The Duncan Multiple Range Test revealed a statistically lower overall score for the lecture-discussion class compared to the other three sections. There was also a statistically higher score on the first examination by both Keller sections over the lecture-discussion and rotating sections. A 3 x 4 analysis of covariance means adjustment revealed the lowest score for fill-in and essay items for the lecture-discussion section. Born and his investigators concluded that personalized instruction could be an important step to consider in trying to solve some of the present problems in teaching and learning. This applied to those aspects involved in the teaching areas of higher

education as related to Psychology of Learning (Born and others, 1972).

Similar to the above study, Alba and Pennypacker, being concerned with the development of improved teaching technologies, conducted an investigation of methods in two human growth and development classes on a college junior year level. A control group of thirty-six students was taught mostly by discussions, films, individual projects and a test every other Friday. The experimental group of forty students closely followed strict behavioral guidelines and procedures as outlined by one of the investigators. Each subject was assigned to another student who was trained in basic course techniques and procedures. Two days per week were devoted to performance sessions wherein the student and manager worked together in reading and answering questions with immediate feedback. The other three days were scheduled with guest speakers, movies and discussion. Both classes met for five days per week.

All students in the Alba and Pennypacker study took a multiple choice and fill-in combination pretest in order to assess entering knowledge. Upon the conclusion of the course, a post-test was given to all students and compared with pretest scores in order to study differential performance change. The means and standard deviation of the pre- and post-test error scores were significantly larger on items of both tests for the experimental group than for the control group. The investigators concluded that similar technology, as used in their specific search, might be employed as effectively in other subject matters as well as in behavioral psychology (Alba and Pennypacker, 1972).

Rovin and others investigated the value of the lecture approach in Oral Pathology teaching at the University of Kentucky. They hypothesized that the value of the lecture in conveying information was limited since it did not allow maximum student participation. Further, they hypothesized that more information could be attained from such teaching methods as seminars, laboratories or individualized learning.

The above investigation involved the dividing of forty-six second year students into two equal groups, designated I and II, in Oral Pathology. The study consisted of a total of fourteen lectures and four laboratory sessions; the same instructor delivered all lectures which were also covered in reading assignments. Group I students attended all of the laboratory sessions and only the first seven lecture sessions. Group II students also attended all of the laboratory sessions but only the last seven lectures. The unattended first seven lectures for Group II and the unattended last seven lectures for Group I were given as free time.

Concluding the first half of course instruction of the Rovin study, (the first seven hours of lecture and two laboratory sessions), all students took an unvalidated objective type examination. Questions were taken only from information which was given during the lecture sessions. A second similar test was given concluding the second half of the course, (the last seven hours of lecture and two laboratory sessions), covering material only presented during the last seven lectures.

In Robin's analysis, a 2 x 2 Latin Square with repeated measures was used to evaluate three variables: 1) groups, 2) lecture versus no lecture, and 3) test. A significant difference was found between the lecture and no lecture groups on both testing sessions, favoring the lecture. Thus, it was decided that the lecture did contribute beneficially to performance on the objective type of examination concerning Oral Pathology, for the laboratory sessions served to reinforce what had been covered within the lectures (Rovin and others, 1972).

Some investigators have claimed that more learning might take place if a teaching style could be matched with a learning style. One such example was found in an investigation by Daniels and Stevens. It was hypothesized that external students, those who were described as being motivated by another source other than themselves, would do better under teacher controlled methods while internal students, described as being motivated from within the self, would do better under a contract grade plan. The contract plan was defined as a situation being within the control of the student whereby he could do projects until a certain grade was reached. The teacher controlled plan included a weekly test with grading procedures depending to a great extent upon how well other students within the class scored. It also required students to attend all lectures and to complete assigned test readings. Rotter's Internal-External Locus of Control Scale was used to identify the more external and internal subjects. The entire study was composed of seventy-three top externals and seventy-three

top internals within an undergraduate psychology class at the University College within the University of Cincinnati, subjects being randomly divided between the two teaching styles. All sections were taught by the same instructor.

A 2 x 2 analysis of covariance upon the dependent variable, which was a seventy-five item multiple choice post-test, revealed to Daniels and Stevens a strong relationship to grade point average and Standardized Achievement Test math scores. A strong disordinal interaction was indicated, revealing that externals performed better under the teacher controlled method. The researchers concluded that their findings were encouraging and that more studies needed to be completed concerning what kind of students benefit most from particular methods of investigation (Daniels and Stevens, 1976).

Several investigations revealed no differences between teaching methods. For example, Domino hypothesized that there would be positive interaction between student style in introductory psychology sections. In the same realm, the interaction would affect both the amount of learning taking place as well as the student's expressed satisfaction with the chosen scholastic environment. Out of nine hundred freshmen administered the California Psychological Inventory, sections "Achievement-via-Confidence," (Ac), and "Achievement-via-Independence," (Ai), and top fifty high Ac-low Ai and the top fifty Ac-high Ai students were identified according to frequency distributions of scores. These one hundred subjects were placed into four sections of introductory psychology, all sections having the same instructor. Sex composition and mean Standardized Achievement Test scores were also comparable in the

four sections. One group of high Ai and one group of high Ac students received material solely through lectures with great emphasis on factual knowledge and content paralleling the textbook reading and examinations. The additional high Ai and high Ac groups were both taught in an independent manner with emphasis placed upon ideas and active participation rather than facts (Domino, 1971).

Domino's final investigating devices consisted of a two-hundred multiple-choice item examination testing mostly factual content and a second part containing six essay questions which emphasized convergent and divergent thinking. The essay sections were independently rated by three psychologists on two nine-point scales. In turn, students also rated the instructor and the course on a seven-point rating scale. Test scores, individual introductory psychology grades assigned prior to the final examinations, and cumulative grade point averages were submitted to both. Sixteen statistically significant correlation coefficients out of fifty-five were revealed through a correlational analysis and a two-factor analysis of variance. The results clearly showed a definite interaction between student achievement orientation and teaching style. The investigators concluded that educators should attempt to match the two. Concurrently, it was pointed out that results showed no effects upon original thinking according to teaching style, nor were there any differences solely attributable to teaching style. Further suggestions for study were to discover what variables might be of interactive significance besides achievement orientation (Domino, 1971).

Rimmac investigated the effects of individualized laboratory experiences, consisting of actual involvements with children and teaching activities, as compared to a lecture-discussion classroom approach including outside reading and written papers in the professional preparation of physical education college majors. The course was an introductory methods class in physical education. Both sections were taught by two different instructors who closely synchronized the material and theory to be covered. Both sections met for six weeks in identical classroom situations with the laboratory group changing in the last four weeks of the term. The group remaining in the classroom had assignments which would cover material identical to that of the laboratory group. For instance, if the group working with children were involved in basic movement skills, then the classroom group would read and discuss basic movement.

Pre- and post measures were given to all students in the above study. A two-way analysis of variance revealed no significant differences between the laboratory-activity situation and the classroom discussion approach. The investigator concluded that the lack of significance may have been due to the stringent demands that the 1.5 standard deviation usually specifies. A considerable change would have been needed within four weeks for any meaningful differences (Rimmac, 1974).

The health training involving two hundred and two Peace Corps Volunteers was investigated by Kerrick, Clark and Rice. One group of students was instructed through the lecture approach while the other

received material through a teaching team. The team consisted of two professionals who each alternated, teaching two sessions each, one by lecture and the other by participation.

In the before and after health training periods of the Kerrick, Clark and Rice study, health tests concerning factual knowledge, attitudes and beliefs were administered. A two-way analysis of covariance on pretest and post-test scores revealed significant information gains for both groups. No significant differences in knowledge were revealed either by the teaching method or the interaction of team x method. Those subjects who initially scored higher on the knowledge test also scored highest on the post-test.

The same information gain was revealed for both the lecture and participation groups. It was concluded that the teacher, rather than the method appeared to be the influence upon information gain for this particular study (Kerrick, Clark and Rice, 1967).

In a study conducted by McCormack, it was indicated that two varied teaching techniques in an elementary science education methods course did not reveal differences in the achievement of cognitive objectives. However, it was indicated that creativity could be improved when direct effects were made with no loss in subject matter achievement.

The experimental group of thirty juniors and seniors received certain creativity-training activities including brainstorming, inquiry development sessions, morphological analysis of problems and



invitations to creative thinking. Lecture-discussion meetings and laboratory sessions were essentially the same for both the experimental group and the control group which consisted of thirty-nine subjects. The Torrance Tests of Creative Thinking were given in a pretest and post-test fashion involving fluency, flexibility and originality of idea production. The Pearson Product-Moment Correlation was used to determine any differences among post-test scores. Likewise, a modification of the Science Education Achievement Test was administered in order to determine achievement scores. A Self-Evaluation Inventory was given to secure student ratings of achievement of forty-seven cognitive and eleven affective course behavioral objectives as well as a course evaluation instrument to provide student ratings on various aspects of the course. A t-test was utilized to determine any differences among the above two tests. The experimental group revealed scores at a highly significant level over the control group on flexibility, fluency and originality as indicated by Torrance's test (McCormack, 1971).

Several investigators have had success in correlating subject matter achievement scores with the type of testing used as well as the type of approach to teaching the content. Coop and Brown investigated the effects of cognitive style and teaching method upon categories of achievement. The Sigel Cognitive Style Test was used to divide subjects into the following categories: the analytic individual who scored above the median on descriptive part-whole responses and below the median on relational-contextual responses and categorical-

inferential responses; the nonanalytic individual who scored above the median on relational-contextual responses and below the median on descriptive part-whole responses and categorical-inferential responses (Coop and Brown, 1970).

In the above study, the forty most analytic subjects and forty most non-analytic subjects were randomly assigned to four educational psychology classes. The classes were taught at the same time of the day with ten most analytic and ten most nonanalytic students in each of the four sections. Four teachers were also randomly assigned to each section; two who preferred teacher-structured-presentations and the other two preferring independent-problem-solving methods concerned with a wide range of psychological and educational topics (Coop and Brown, 1970).

Within the Coop and Brown study, an achievement test, consisting of sixty objective-type questions, on the classroom interaction systems was given to all students at the end of the unit of study. The unit consisted of three weeks of course work or fourteen total lessons. Thirty items were defined as factual and the remainder as conceptual-generalization items. A 2 x 2 analysis of variance factorial design employed with teaching method and cognitive style disclosed a significant difference between the two teaching methods, with teacher-structured-presentation methods showing the superior achievement. Students in the teacher-structured-presentation also revealed a significant difference with conceptual-generalization items. A 2 x 2 analysis of variance factorial design employed with teaching

method and cognitive style disclosed a significant difference between the two teaching methods, with teacher-structured-presentation methods showing the superior achievement. Students in the teacher-structured-presentation also revealed a significant difference with conceptual-generalization content achievement. A significant main effect for teaching method was revealed; likewise, for students in the teacher-structured-presentation method who scored higher than students in the independent-problem-solving method. There were no other significant differences (Coop and Brown, 1970).

Conclusions from the above study suggested that the teacher-structured-presentation method be used over the independent-problem-solving method of instruction when the primary objective involves the acquisition of factual content or conceptual-generalization content. This study also indicated that college students' cognitive style did not seem to interact with either teaching method or toward learning a particular type of subject matter (Coop and Brown, 1970).

Jernstedt divided one hundred and five college students into two groups of a psychology survey course; one an individualized section and the other a traditional section according to matched cumulative grade point averages and student preferences for paper or examination based grades. The same instructor taught both sections with eleven students assisting in the individualized section who had had the course previously.

The traditional group received a conventional lecture-reading examination style of teaching, being tested finally on course principles

through sums of scores from four exams. Students also received a course syllabus and course content outline describing the examinations, readings and procedures. The individualized group was given a lengthy, detailed syllabus describing behavioral goals, readings, examinations, features of the course, unit outlines, projects necessary to complete work and motivational aspects involved. Students then proceeded at their own pace with the bulk of their work consisting of nine 300-word papers on selected course concepts and a choice of participating in oral interviews concerning course principles (Jernstedt, 1976).

Other than the above descriptions, both class sections differed only in outside the classroom work. They both met together three times per week for lecture, discussion, films, demonstrations and examinations as well as using the same readings. Both classes were given mid-term and final examinations consisting of single response multiple choice and fill-in-the-blank items. An open book essay type of examination and a hybrid examination, (described as an open-book examination asking for short answers consisting of one or several sentences), were also given. The essay and hybrid versions were given on the supposition that single responses and essay examinations measure quite different behaviors and that such examinations might reveal how both the traditional and individualized methods best prepare students for various examination situations (Jernstedt, 1976).

Analyses of variance revealed that the traditional group performed significantly better on both single response examinations while the individualized group scored significantly better on the essay

examination. There was no difference when comparing hybrid examination results. The results indicated that students who received individualized instruction performed better on the examination most resembling course work and that single-item response examinations are presumably quite different from essay examination behaviors. It was thus concluded that students under individualized instruction perform better on evaluation measures requiring behaviors similar to course activities than those students under traditional teaching methods. Questionnaires also revealed that students in the individualized section generally viewed the course in a more positive manner than those students in the traditional section (Jernstedt, 1976).

#### TEACHER TRAINING

Hoffman expressed an awareness toward the growing concern of quality physical education programs within the nation's elementary schools. He noted that expanded efforts had been made toward improvements through governmental grants, the employing of consultants by the American Association of Health, Physical Education and Recreation and the holding of national conferences and workshops, to name a few. Local districts had been employing specialists who alone conducted the program for a particular school. At the same time, the professional preparation institutions were producing more qualified teachers through the improvement of course structures. According to Hoffman, the professional preparation area specialists in elementary school physical education had established that the primary emphasis in the program

should be on the knowledge and understanding of children as well as providing them with meaningful experiences. More stress was also placed upon the social and psychological factors affecting children and how movement experiences contributed to total experiences (Hoffman, 1968).

In discussing the professional preparation of teachers in general, Broudy had his definite philosophy. He expressed that such training was no different, structurally, from the training of engineers, lawyers and physicians (Broudy, 1965).

Broudy also stated the following concerning teacher training:

In a fully developed program of professional training, the foundational dimensions, the general training, the specialized technology, the specialized instrumentation and research methodology are provided through a variety of instructional means: courses, lectures, readings, laboratory work, clinical experience, and internship. Every move to omit or to minimize any one of these dimensions can therefore be construed as an attack on the professional maturity or status of teaching (Broudy, 1965).

Avila and others concerned with the teacher education program at the University of Florida indicated that there seemed to be a "narrow gap" between theory and practice in overall teacher education. The major complaint was that large classrooms with many students where the lecture was the main approach was not conducive to learning. As a result, Avila and others implemented an experimental program for the training of elementary school teachers. Key concepts which determined the actual organization of the program were to make learning personally meaningful and relevant, to adjust learning to the rate and need of the individual, to involve a great deal of self direction and to create a

close relationship between theory and practice. The majority of the principles of organization were attempted through seminar sessions, formal and informal gatherings, all of which encouraged personal and humanistic experiences through interaction with a faculty member as well as discussion, exploration and a realization of the meaning of teaching experiences (Avila and others, 1972).

Such experiences above were centered on a progressive approach. The experiences varied from classroom observation, tutoring; to teacher assistant, record keeping, individualized and small group teaching with children; and finally, to teacher associate where the entire class was taken on a full-time basis. The program described within the published article had not been evaluated for its success (Avila and others, 1972).

The American Association of Health, Physical Education and Recreation published a position paper establishing a philosophy on what a quality physical education program should be for the elementary school level. A statement was included which described the classroom teacher and what preparation should be:

Preparation for the classroom teacher should include an understanding of the relationship of physical and motor development to the total learning experience of the child. Course work in movement skills, methods and content of elementary school physical education would be required. Laboratory experiences in physical education are essential (American Association of Health, Physical Education and Recreation, 1969).

Hanson requested that teacher preparation institutions offer a broader content area in activity courses for the elementary school

physical education major. She also stressed that field experiences were essential in order for future teachers to gain a thorough working knowledge of children. Field experiences the first year in the program are also desirable if possible. Such experiences were described as observations of children, assisting classroom teachers, and summer recreational-type of work with children. Hanson further commented that institutions which only require a single course in teacher preparation could make the difference between adequate and inadequate physical education for children (Hanson, 1972).

Beck described how the San Francisco Schools used the elementary classroom teacher to promote sound physical education programs when there was a shortage of specialists. One point pertinent to this investigation was that increased understanding automatically produced greater enthusiasm along with immediate program improvements. Beck's emphasis here was that specific skills were illustrated and described in non-technical terms, thus making it easier for the non-major in physical education to understand (Beck, 1963).

Dauer and Pangrazi have also discussed teacher training emphasis for elementary school physical education methods classes. First, there should be a provision for relevant and unique backgrounds and methodology, as well as a basis for establishing a place for physical education in the total educational picture. In conjunction, there should be an understanding of what constitutes a good program along with the activities and progressions involved. When at all possible, teacher training students should have opportunities for



observing and working with children; but, they stated, only when sufficiently ready. Observations should be made with specific goals in mind. Further, students can learn more by watching rather than just listening, and can also gain valuable insight from the approach and organization used by the college instructor. Dauer and Pangrazi stressed that students should first work with activity in order to better understand its underlying theory and technique. Finally, when children are not available, much value can be gained by having college students teach each other in gaining additional insight into activity sequences and progressions. Perhaps a little more skill would add to the confidence for later demonstration with children (Dauer and Pangrazi, 1975).

Dauer and Pangrazi disclosed that some universities have divided their methods courses in elementary school physical education for the general classroom teacher according to two levels: one covering grades K-3, and the other covering the intermediate grades. The basic theory was that the primary teacher in the first level needed more emphasis in a heavy movement approach, while the intermediate teacher should be more interested in sports and specific skill development.

In considering the modern-day approach to movement theory in physical education within the teacher training institution, Dauer and Pangrazi stressed that the teacher should have an added knowledge and understanding of a more scientific basis for movement. In conjunction, basic kinesiological and mechanical principles background was also

essential. With this background, the teacher could apply such principles to the child's basic movement (Dauer and Pangrazi, 1975).

A balance in teaching methods of the past and present were recommended by Dauer and Pangrazi. The teacher might best utilize both approaches according to individual style and personality. The traditional approach was described as that of using more of a command and direct approach while the indirect methodology allowed for problem-solving, exploration and creative techniques. Dauer and Pangrazi emphasized that children's needs and characteristics, activity goals, and especially the achievement of optimum development, were a key to which methodology might be most appropriate at the time of learning (Dauer and Pangrazi, 1975).

A final point of importance stressed by the above authors concerning lecture, discussion and activity participation was made in relation to establishing fitness levels necessary for absorbing course demands. Lecture and discussion were advocated during early presentations with progressive short periods taken out for activity at interims for those students who need to build stamina (Dauer and Pangrazi, 1975).

The lecture method in teaching on the college level has been supported by Kyle as the method holding the possibility of reaching the most students in the most exciting way. He criticized the use of discussion classes when discussion is the major approach to be used by saying that students lack the background to present the valuable information needed. In Kyle's support for the lecture, he expressed

that it was more often the lecturer who made the lesson and not the material; that any individual willing to spend the time necessary in research, organization and practice could be most successful (Kyle, 1972).

Rothwell and others stated that both the seminar and laboratory approaches to teaching can gain greatly in effectiveness. At the same time, they related that there was continuing controversy concerning the relative merits of lecture, but that lecturing and listening could be both an active and stimulating process. Rothwell continued to discuss the various reasons for presenting courses through a variety of methods; some classes may be taught through the classroom lecture procedure while others focus upon discussion, seminar, laboratory and other approaches. These methods may often be chosen due to subject matter, the instructor's philosophy, the available facilities and equipment. The instructor's particular style of teaching would also play a major role (Rothwell and others, 1967).

#### SUMMARY

For quite a number of years, educators and researchers have attempted to determine which teaching methodologies are most appropriate in varied subject matters for the attainment of the most understanding and knowledge. Many combinations have been utilized including personalized, individualized, teacher-centered, lectures, discussions, seminars, and student-centered approaches with discussions, laboratory participation, and problem-solving techniques. Some investigators

have reported results which indicate that some methods merit more attention than others for their particular courses while other researchers have found no statistical differences. On the other hand, others tend to agree that the intelligence of the students involved might be the factor that will reveal any differences, if any, rather than the teaching approach itself.

The literature related to teacher training, previously discussed in this chapter, also revealed that efforts are definitely underway toward the improvement of quality elementary school programs, especially in the field of physical education. It appears that the major emphasis is being placed upon the training of teachers through various methods and approaches. Common among the approaches is the practice in laboratory work, which would include activity participation as well as observing and working with children. Various individuals who are involved with the training of qualified teachers within elementary school physical education seem to prefer some methods over others. On the other hand, some state that there is a time and place for each teaching style.

It was the purpose of this study to investigate the lecture-discussion emphasis approach as opposed to the laboratory-activity approach in the teaching of elementary school physical education. The investigation involved determining which approach would best assist students in attaining understanding and knowledge of teaching elementary school physical education.

## Chapter 3

### METHODS AND PROCEDURES

#### INTRODUCTION

This study was designed to investigate the relative effectiveness of two different teaching approaches in elementary school physical education methods classes to college level elementary education majors. The two methods which were studied were the laboratory-activity method and the lecture-discussion method. This chapter discusses the subjects and the procedures that were used in this investigation along with the instrumentation and statistical treatment of data.

#### SAMPLE

The final samples studied in this investigation consisted of fifteen seniors, nine juniors and two sophomores, all elementary education majors, for the laboratory-activity section. Six seniors, seven juniors and four sophomores were included within the lecture-discussion section. These students were enrolled in one of two elementary school physical education methods classes during the first semester of the 1977-78 school year at Longwood College in Farmville, Virginia. The assignment of the students in either one or the other class was difficult due to scheduling conflicts governed by the limitations of registration. It was therefore impossible to randomly assign the subjects to one of the two treatment groups. The investigator

attempted to control the balancing of numbers as closely as possible during the registration procedure.

An information sheet, constructed by the investigator, (see Appendix A), to ascertain if any of the subjects had any past training and/or experiences in working with young children was given to and completed by all of the students during the first class session. Utilizing this information, four subjects who had already experienced close working relationships with children in the past or who had already taken a course similar to the two classes under investigation were eliminated from this study.

#### PROCEDURES

Both of the elementary school physical education methods classes, designed solely for elementary school classroom majors, were taught by the same instructor. The two classes within this investigation used the identical course syllabus and also operated under the same objectives (see Appendix B). The same textbook was required of all subjects as were identical outside readings and project assignments (see Appendix C).

The class taught using the laboratory-activity methods approach as its basic emphasis met for three class periods per week at eight o'clock in the morning, Monday, Wednesday and Friday for fifty minutes of instruction in each session. This particular class met in the gymnasium with participation and small teaching assignments dealing in elementary school physical education activities and procedures. The

second class was taught with the utilization of the lecture-discussion methods approach and met at nine o'clock in the morning, Monday, Wednesday and Friday for fifty-minute instructional periods. Both classes were conducted for a total of eleven weeks of the semester.

#### INSTRUMENTATION

In order to measure the differences in knowledge and understanding of the elementary school physical education program following the course of study, a short answer test, consisting of forty multiple choice questions was administered to both classes on the last day. The test was compiled by the investigator and was given to a similar group of students in the semester prior to the one in which the investigation was made. This was done in order to clarify any misunderstanding among the questions. The pilot group of students, not involved within this actual investigation, consisted of a physical education methods class of seventeen elementary school classroom majors. All questions were derived from material which could have been secured through textbook reading assignments, class discussion, lecture and laboratory sessions (see Appendix D for Knowledge and Understanding Inventory).

#### STATISTICAL TREATMENT OF DATA

The Kuder-Richardson formula 20, as suggested by Ferguson, was utilized in establishing the reliability coefficient of the multiple choice test. This procedure was recommended as being a measure of internal consistency or homogeneity. The reliability coefficient was

expected to be high if the test items revealed high intercorrelations with each other as well as measuring the same attribute (Ferguson, 1966).

Since the test scores of a factual test instrument were to be used in comparing the two teaching methods, student characteristics which might indicate any possible differences in learning ability between the two classes were obtained from school records. Those variables chosen for such a comparison were math and verbal scores only from Standardized Achievement Tests and accumulative grade point averages. Multivariate analysis of variance revealed that there was a significant difference between the two classes at the .05 level due to differences in the accumulative grade point averages only. An analysis of covariance was run using the accumulative grade point average as the covariate and the multiple choice test scores as the dependent variable (see Appendix E). The F test was applied to determine the level of significance with acceptance and rejection being made at the .05 levels.

#### SUMMARY

This study was designed to investigate whether a college level lecture-discussion approach or a college level laboratory-activity approach to teaching would result in the most knowledge and understanding from material covered in elementary school physical education methods classes. Two classes were conducted; one using the lecture-discussion approach and the other, the laboratory-activity approach, during the fall semester of 1977 at Longwood College in Farmville, Virginia. The investigator taught both classes.



An information sheet which revealed past experiences and/or past courses of the students was utilized for eliminating any subjects who would not be suitable for the study. Since it was impossible to randomly assign subjects or treatment procedures, accumulative grade point averages were used as the covariant in comparing the scores of a multiple choice test following instruction. The same test was given to both classes in order to investigate any possible differences in knowledge or understanding between the two classes concluding the study.

## Chapter 4

### RESULTS AND DISCUSSION

This study was conducted for the purpose of investigating the relative effectiveness of two different approaches of teaching elementary school physical education methods classes to college level elementary education majors. Student scores on a factual test instrument were used to compare the differences in knowledge and understanding with the two teaching methods.

In order to attempt to eliminate any possible student characteristics which might indicate differences in learning abilities between the two classes, a multivariate analysis of variance was applied to verbal and math standardized achievement test scores and also to accumulative grade point averages which were obtained through school records. The variance-covariance matrices for the two classes were equal. A test of equality of vector of means showed a significant difference at the .05 level, the calculated  $U = .7441$ ,  $U(1,3,42) \cdot 05 = .8220$  (Table 1). Simultaneous confidence intervals showed that the significance was accounted for by accumulative grade point averages, the interval  $.0515 \leq \bar{X} \leq 1.0513$  (Table 2). Upon these findings, the accumulative grade point average was then used as the covariate and the test scores as the dependent variable when running the analysis of covariance.

When comparing the slopes ( $b_L = 2.2162$ ,  $b_C = 2.0668$ ) between the two classes, the test showed no significant differences ( $t_{39} = 1.01$ ).

Table 1  
Mean Vectors and Wilks Ratio Test

	GPA	SAT Verbal	SAT Math
Laboratory	2.7235	432.96	468.88
Classroom	2.1722	380.56	438.33

$U_{Ca1} = .7441$

$U_{(1,3,42) \cdot 05} = .8220$

Table 2  
Simultaneous Confidence Intervals

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---

GPA	$.0515 \leq \delta \leq 1.0513^*$
Verbal	$-9.73 \leq \delta \leq 114.54$
Math	$-40.75 \leq \delta \leq 101.8545$

---

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\* Contributing to rejection of  $H_0: \mu_1 = \mu_2$

Table 3  
Analysis of Covariance

Source of Variation	df	SSY	SPxy	SSx	SS <sub>E</sub>	df	s <sup>2</sup>
Between	1	10.1863	5.5853	3.0625	346.6790	40	8.6670
Within	41	405.6742	27.1403	12.4857	346.6790	41	
Total	42	415.8605	32.7256	15.5482	346.9814		

F

Adjusted Treatments	.0064	.3024	1	.3024
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Since the covariant was significant, the adjusted treatment means were obtained between the scores (22.76, 22.95) which revealed no significant difference ( $F = .0064$ ) (Table 4).

The Kuder-Richardson Test of Reliability for the short answer test showed a low reliability coefficient, ( $r = .1771$ ) (Ferguson, 1966). One subject in the classroom section chose to take an incomplete on course work and did not take the final test.

The results of this study appeared to correspond with the original hypothesis as stated in Chapter 1. The following null hypothesis concerning the teaching of elementary school physical education methods was expected to be true:

The increase of knowledge and understanding of an elementary school physical education course offering would not be significantly different between a laboratory-activity college methods class and a lecture-discussion methods class as revealed through post-test scores.

## DISCUSSION

It is obvious that this investigation did not produce significant results. Since the available literature is not in agreement as to which teaching methods may be best for fostering the greatest gain in understanding and knowledge, the results are not surprising.

### Teaching Methods

Rovin and others reported findings which revealed significant differences between the lecture and non-lecture groups. This finding appeared with two testing sessions, both favoring the lecture (Rovin

Table 4  
Adjusted Treatment Means

	Adjusted Treatments	$SS_E$	df	$s^2$	F
Laboratory	22.76				
Classroom	22.95	.3024	1	.3024	.0064

and others, 1972). Rovin reported that the gains may have been attributed to the fact that laboratory sessions could have served as reinforcers for the kinds of information being stressed. As in the present investigation, outside assignments and readings were identical. These exercises could have served as the needed reinforcers.

Domino's study showed no indication which solely supported teaching style. However, there were definite significant interactions between subject achievement orientation and teaching style (Domino, 1970). Although the present study did not examine student achievement orientation, it did agree with Domino's findings stating that teaching style alone did not seem to have an effect.

Similar to the above findings, Kerrick, Clark and Rice compared lecture vs. lecture-participation methods of teaching. Their findings revealed no differences in knowledge gain when comparing the two approaches (Kerrick, Clark and Rice, 1967). Likewise, Rimmac compared knowledge gains between laboratory methods of learning and those involved within the classroom. There were no significant gains for either of these groups (Rimmac, 1974). McCormack had a different approach in attempting to successfully foster creative thinking through various creative approaches. The study produced no alterations in cognitive learning as a result of the varied methods attempted (McCormack, 1971). The results of the present study appear to be closely related; therefore, one may conclude that neither of the two situations have altered the learning which may have taken place.



Unlike the present study, several investigators did produce findings which definitely proved the traditional or lecture-discussion approach to teaching to be more successful. Born and others found the lower scores of a post-test to be present among a lecture-discussion section as compared to the more personalized approaches involved in three other class sections (Born and others, 1972). Alba and Pennypacker compared a conventional approach, described as having an emphasis on lecture-discussion, with that of a more personalized method of teaching. Their results showed significant gains to take place with the personalized group (Alba and Pennypacker, 1972).

#### Student Style of Learning vs. Testing

Still another variable has been brought to attention which was not considered in the present study. It was necessary that such points should be noted since they could have possibly influenced the present study had they been used. Coop and Brown studied the possible relationships of student analytic and nonanalytic cognitive styles as compared to teacher-structured and independent problem solving methods. Post-test results revealed that teacher-structured methods were superior when examining factual as well as conceptual-generalization types of examinations (Coop and Brown, 1970).

Jernstedt published similar results to the above study. Students did better on factual material who had been taught by a traditional approach. The conclusion in Jernstedt's investigation was that the teaching method may be used to better prepare students for the exam which they will take (Jernstedt, 1976). Since reliability

coefficients were low in the present study, it is difficult to judge whether teaching style had an impact. The multiple choice type test was not given prior to the post-testing situation. Students were told that they would be given an objective type test, favoring multiple choice items.

Daniels and Stevens were concerned with comparing internal and external styles of learning to teacher controlled classes vs. contract for grade planned classes. Although their results showed that one type of student definitely did better under one plan as compared to the other, the researchers concluded that further investigation was needed. The study suggested that the above plan may not be for everyone, especially not in terms of optimizing achievement (Daniels and Stevens, 1973). Again, styles of learning were not investigated in the present study.

In view of examining the reliability coefficients of this particular study, the low scores could have been due to one or to a number of factors. The items could have produced low intercorrelations with each other, not measuring the same attributes. A greater number of subjects may also reveal a different reliability. An additional fact which needs to be considered is that the test was given to the pilot group as a pre-test and to the treatment groups in the present study as a post-test.

## Chapter 5

### SUMMARY, CONCLUSIONS, RECOMMENDATIONS AND IMPLICATIONS

#### SUMMARY

The purpose of this study was to investigate the relative effectiveness of two different teaching approaches in elementary school physical education methods classes for college level elementary education majors. The two methods which were studied were the laboratory-activity method and the lecture-discussion method. The subjects involved in the study were sophomore, junior and senior elementary majors at Longwood College in Farmville, Virginia. Students enrolled in one of the two elementary school physical education methods classes during the first semester of the 1977-78 school year.

An information sheet, constructed by the investigator, was completed by each subject in both classes which revealed past experiences and classes already taken which would be similar to the materials and procedures used in this investigation. Four subjects, two in each class section, were eliminated from the study who had past experiences in working with young children or who had already had courses similar to those in the study. The final sample consisted of fifteen seniors, nine juniors and two sophomores for the laboratory-activity section. Six seniors, seven juniors and four sophomores were included in the lecture-discussion section.

Both of the classes used in this investigation were taught by the same instructor. The identical course syllabus, objectives, textbook, outside readings and project assignments were also used for both teaching approaches. The class using the laboratory-activity methods approach as its basic emphasis met for three class periods per week at eight o'clock in the morning, Monday, Wednesday and Friday for fifty minutes of instruction in each session. This particular class met in the gymnasium with participation and small teaching assignments dealing in elementary school physical education activities and procedures. The second class was taught with the utilization of the lecture-discussion methods approach and met at nine o'clock in the morning, Monday, Wednesday and Friday for fifty minute instruction periods. Both classes were conducted for a total of eleven weeks of the semester.

In order to measure the differences in knowledge and understanding of the elementary school physical education program following the course of study, a short answer test, consisting of forty multiple choice questions was administered to both classes on the last day. Since the test scores of a factual test instrument were to be used in comparing the two teaching methods, student characteristics which might indicate any possible differences in learning ability between the two classes were obtained from school records. Those variables chosen for such a comparison were math and verbal scores only from Standardized Achievement Tests and accumulative grade point averages. Multivariate analysis of variance revealed that there was a significant difference between the two classes at the .05 level due to differences in the

accumulative grade point averages only; therefore, an analysis of covariance was run using the accumulative grade point average as the covariate and the multiple choice test scores as the dependent variable. The F test was applied to determine the level of significance with acceptance and rejection being made at the .05 levels. No significant differences were found between the test scores when comparing the two teaching approaches.

### CONCLUSIONS

Within the limitations of this investigation the following conclusions were drawn:

1. No significant differences in short answer test scores were revealed between the lecture-discussion and the laboratory-activity approaches to teaching college level methods courses in elementary school physical education.

2. There was no indication which solely supported one teaching style over the other when investigating the lecture-discussion approach vs. the laboratory-activity approach to elementary school physical education methods classes on the college level.

### RECOMMENDATIONS

The foregoing conclusions lend themselves to the following recommendations when considering investigations similar to the one involved within this study:

1. A stronger research design would involve either the random

assignment of subjects to treatment groups or treatments to subject groups.

2. A stronger research design would involve the utilization of a control group which would only be concerned with the test instrument and not the class procedure.

3. A stronger research design would possibly involve other teaching approaches such as a combination of the lecture-discussion and laboratory-activity approaches to teaching elementary school physical education on the college level.

4. A stronger research design might possibly consider the investigation of matching student learning styles with teaching styles.

5. A stronger research design might possibly consider the use of more testing instruments rather than one short answer type of examination in order to measure gains in knowledge and understanding between the teaching methods being investigated.

#### IMPLICATIONS

1. There is an absence of a valid and reliable research tool for testing the gain in knowledge and understanding in elementary school physical education methods classes on the college level.

2. The professional literature and investigation into research studies in physical education reveals that little empirical testing has taken place in the teaching of elementary school physical education methods classes on the college level.

3. The literature concerning the teaching of elementary school

physical education methods classes on the college level seems to be lacking in any conceptual framework or in preparatory programs toward improving teacher education.

4. The professional literature concerned with the training of teachers in elementary school physical education on the college level strongly suggests the utilization of laboratory experiences which should be introduced early in the preparatory programs. Statistically significant evidence which would support such an approach seems to be lacking.

5. The real test in the gain of knowledge and understanding received in elementary school physical education methods classes on the college level may best be revealed through the teacher's actual teaching practices in post college work which would require longitudinal studies involving the development of still other reliable and validated evaluation instruments.

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APPENDIX A

Survey of Past Experiences  
and Training

Survey of Past Experiences  
and Training

Name \_\_\_\_\_

College Address: Dorm \_\_\_\_\_ Room \_\_\_\_\_ P.O. Box \_\_\_\_\_

Advisor: \_\_\_\_\_

Number of hours presently completed and recorded in the Registrar's office: \_\_\_\_\_.

College courses already taken which deal with child growth and development:

<u>Title</u>	<u>Semester Taken</u>
_____	_____
_____	_____
_____	_____

List below any working relationships or experiences in the past that you have had with children such as day care centers, camping, summer recreation, etc.:

<u>Type of Work</u>	<u>Ages of Children</u>	<u>Length of Time</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

College Courses taken which involve the learning of an activity such as golf, tennis, etc.:

<u>Activity</u>	<u>Semester Taken</u>
_____	_____
_____	_____

Participation in varsity sports during high school:

<u>Sport</u>	<u>Number of Seasons</u>
_____	_____
_____	_____
_____	_____

Special training that you may have had in any activities such as ballet, modern dance, etc.:

<u>Activity</u>	<u>Number of Years</u>
_____	_____
_____	_____
_____	_____

Record the number of brothers you have \_\_\_\_\_ ages \_\_\_\_\_

Record the number of sisters you have \_\_\_\_\_ ages \_\_\_\_\_

If you are a transfer student, where else did you attend college

\_\_\_\_\_ for how long \_\_\_\_\_

What varsity sports have you participated in during college:

<u>Sport</u>	<u>Number of Years</u>
_____	_____
_____	_____
_____	_____

**APPENDIX B**

**Course Syllabus**

## LONGWOOD COLLEGE

## Health and Physical Education Department

## Health and Physical Education 360

- I. Catalogue Description: Health and Physical Education 360. Elementary School Health and Physical Education. Health and physical education principles and activities for the elementary school. Required for a major in elementary education. 3 credits.
- II. Course Objectives:
  - A. To identify the contributions physical education can make in the growth and development of the young child.
  - B. To identify the scope of the program, including the repertoire of activity, with their contributions to the objectives.
  - C. To identify the foundations and current learning theories with their implications for the elementary school physical education program.
  - D. To identify the aims, objectives and goals of a sound elementary school physical education program.
  - E. To identify the nature and characteristics of children with implications for appropriate activity.
  - F. To identify methods of class organization and the presentation of material in elementary school physical education.
  - G. To identify the characteristics and aspects of various activity through experiences of participation and teaching.
  - H. To identify means by which to evaluate the program in meeting its objectives.
  - I. To identify the need for the physical fitness, physical skills, safety and emotional well-being of the elementary school aged child.
  - J. To develop a thorough understanding of the vital role that physical education has with the young child.

III. Absence Policy: Students are expected to attend all classes and will assume full responsibility for the loss incurred due to absences. Work may be made up when the absence results from illness, emergency or participation in a college activity approved by the office of the Dean of the college.

IV. Basis for Grades:

Two Physical Education Tests, 15% each	30%
One Health Education Test	20%
Research Project	10%
Indigeneous or Perceptual Motor Project	10%
Fifteen Active Classroom Activities	10%
Observations	<u>20%</u>
	100%

V. Required Text: Dauer, Victor P. and Pangrazi, Robert P. Dynamic Physical Education for Elementary School Children. (Minneapolis, Minnesota: Burgess Publishing Co.) 1975.



**APPENDIX C**

**Course Content**

## ASSIGNMENT DATES AND COURSE CONTENT

<u>Assignments</u>	<u>Dates</u>
Chapter 1 Physical Education Today	Aug. 31-Sept. 2
Chapter 2 Basis for the Program	
Chapter 19 Game-Type Activities	Sept. 5-9
Chapter 20 Relays	
Chapters 23-32 are also involved	
Chapter 5 Basis of Movement Learning	Sept. 12
Chapter 11 Developing Movement Patterns and Basic Skills	
INDIGENEOUS PROJECTS DUE	Sept. 14
Chapter 10 Movement Education and Basic Movement	Sept. 16-19
Chapter 12 Perceptual-Motor Competency	
Chapter 4 Organizing for Effective Teaching	Sept. 21
Chapter 7 Teaching Styles, Lesson Planning, and Introductory Activity	
Chapter 6 Guiding the Learning Process	Sept. 23-28
Chapter 13 Creative Play - Story Games and Dramatic Play	
MID TERM EXAM	Sept. 30
Chapter 8 Implementing Physical Fitness in the Program	Oct. 3-7
Chapter 9 Postural Considerations	
Chapter 14 Rhythmic Activities	Oct. 17-21
Chapter 3 Physical Education Program	Oct. 24
Chapter 15 Manipulative Activities	Oct. 26
RESEARCH PAPER DUE	Oct. 28
Chapter 22 Integration with Other Subjects	Oct. 31-Nov. 2
Chapter 18 Combative Activities	
Chapter 16 Apparatus Activity	Nov. 4-7
Chapter 17 Stunts and Tumbling	
Chapter 21 Classroom and Limited Area Activities	Nov. 9-11

Chapter 29 Track and Field Activities	Nov. 14
Chapter 31 Miscellaneous Activity	Nov. 16
Synthesis and Review	Nov. 18
FINAL PHYSICAL EDUCATION TEST	Nov. 21
OBSERVATIONS DUE	Nov. 23

APPENDIX D

Elementary School Physical Education  
Knowledge and Understanding Inventory

Elementary School Physical Education  
Knowledge and Understanding Inventory

Directions: All of the questions below are of the multiple choice type. Section I requires the ONLY answer and section II, the BEST answer. Please do not mark the question sheets. Place all answers on the answer sheet provided and turn in both answer sheet and question sheets when completed. Thank you.

Section I - Only ONE response is correct:

1. What is the basic concept inherent in the "movement education approach" to teaching physical education activities?
  - a. Problem solving methodology
  - b. Perceptual motor competency
  - c. Physical fitness and skill emphasis
  - d. An accumulation of knowledge about fitness
  
2. Which term describes the success of passing through stages of neuromuscular development during childhood?
  - a. Movement education
  - b. Motor learning
  - c. Perceptual motor competency
  - d. Movement exploration
  
3. Which of the following practices is not advocated in the movement education approach to teaching?
  - a. Giving the child problems to solve on his/her own
  - b. Giving the child demonstrations of the proper movements
  - c. Giving ample opportunity for exploration and creativity
  - d. Giving all positive feedback with little or no criticism
  
4. What methodology is advocated for the teacher of elementary school physical education in reaching the student?
  - a. Indirect or problem solving approach
  - b. Direct or command teaching
  - c. A definite balance between indirect and direct methods
  - d. The teacher's own style fitting to indirect and direct methods
  
5. Which of the following basic urges should be met first in structuring an elementary school physical education program for young children?
  - a. Urge for movement
  - b. Urge for success and approval

- c. Urge for physical fitness and attractiveness
  - d. It is difficult to rank the above in importance
6. Which characteristics describe the K-1 grade levels?
- a. Like conformity and large group activity
  - b. Game skills not developed, accept defeat poorly
  - c. Long attention span, sex difference interest
  - d. Long endurance span, large muscles not developed
7. What is the most suitable scheme for planning activity for the intermediate or upper grade levels?
- a. Plan different activities for each different day
  - b. Plan weekly units of the same activity
  - c. Plan several weeks of the same activity
  - d. Plan alternating days of different activity
8. What will have the most influence in determining the actual placement of activities in the yearly schedule?
- a. Classroom teacher
  - b. College methods class philosophy
  - c. Local school board
  - d. Local preferences and conditions
9. What is the correct mechanical principle for the pushing and pulling of heavy objects?
- a. Decrease the size of the base of support
  - b. Raise the center of gravity
  - c. Keep the major body joints straight
  - d. Keep the major body joints at right angles
10. Which of the following arrangements shows the proper program sequence based upon skill development and attainment?
- a. Non-locomotor and locomotor skills, body control, manipulative skills, game and apparatus skills
  - b. Apparatus and game skills, locomotor and manipulative skills, and body control
  - c. Body control, locomotor and manipulative skills, apparatus and game skills
  - d. All of the above are appropriate
11. Which of the following mechanical principles is incorrect for receiving a heavy force or catching?
- a. Keep the arms away from the body upon receiving
  - b. Bring the arms into the body upon receiving

- c. Position the body in direct line with the flight of the object
  - d. Catch with the pads of the fingers while they are spread
12. Which activities should receive the greater time allotment within the K-3 grade levels?
- a. Movement experiences and body mechanics
  - b. Apparatus, stunts and tumbling
  - c. Sports skills and activities
  - d. Simple game activities and relays
13. Which activity category should receive the least attention in the K-3 grade levels?
- a. Rhythmic activities
  - b. Sport skills and activities
  - c. Movement experiences and body mechanics
  - d. Apparatus, stunts and tumbling
14. Where does the greater percentage of activity lie within the intermediate grades, (4-7)?
- a. Apparatus, stunts and tumbling
  - b. Simple game activities and relays
  - c. Sport skills and activities
  - d. Fitness routines and activities
15. What activities should receive the least attention during the intermediate grades, (4-7)?
- a. Movement experiences and body mechanics
  - b. Rhythmic and self testing activities
  - c. Apparatus, stunts and tumbling
  - d. Simple game activities and relays
16. Which of the following groupings includes the most important measurable components of physical fitness?
- a. Cardiorespiratory endurance and strength
  - b. Cardiorespiratory endurance and agility
  - c. Strength and power
  - d. Strength and flexibility
17. Which term describes the range of motion at the joints?
- a. Agility
  - b. Flexibility
  - c. Power
  - d. Circular strength

18. When should the actual physical fitness testing program be in a child's school career?
- Grades K-12
  - Grades 2-12
  - Grades 6-12
  - Grades 4-12
19. Which of the following body movements is the least harmful to the body?
- Sit-ups with legs straight
  - Sit-ups with legs bent
  - Lifting with back muscles
  - Deep knee bending
20. Which term describes an exercise in held contraction against an immovable base, (or muscular tension with no movement)?
- Isometric
  - Isotonic
  - Anti-gravity
  - Cardiovascular
21. Which grouping would be the most logical for the first four stations of circuit training?
- Rope jumping, sit-ups, run-in-place, push-ups
  - Push-ups, crab walk, rope jumping, sit-ups
  - Bend and stretch, sit-ups, jumping jacks, curl downs
  - Bend and stretch, sit-ups, rope jumping, crab walk
22. Which exercise would best help prevent curvature of the spine?
- Prone arch back
  - Sit-ups
  - Hanging by the arms
  - Seal walk
23. Which exercise would best help prevent cervical lordosis?
- Sit-ups
  - Hanging by the arms
  - Toe touching
  - Prone arch back
24. What is a basic accepted test for discovering under-achievement in perceptual-motor skills for young children?
- Catching small objects



- b. Throwing small objects
- c. Balance and laterality
- d. Striking small objects

25. Which grouping shows the proper order of skill progression for rhythmical activities?

- a. Step hops, two-step, rope jumping steps, polka
- b. Rope jumping steps, two-step, step hops, polka
- c. Polka, step hops, two-step, rope jumping steps
- d. Rope jumping steps, polka, step hops, two-steps

26. Which grouping shows the proper order of skill progression for stunts and tumbling activities?

- a. Frog handstand, three point tip-up, forward roll, cartwheel
- b. Forward roll, three point tip-up, frog handstand, cartwheel
- c. Forward roll, cartwheel, three point tip-up, frog handstand
- d. All of the above are on the same level

27. Where should the back person support the partner's legs in the wheelbarrow stunt?

- a. Below the ankles
- b. Below the knees
- c. Top of the feet
- d. Halfway between ankles and knees

28. Which skill is one of the easiest and most accurate to observe in examining young children's basic movement capabilities?

- a. Walk
- b. Run
- c. Skip
- d. Gallop

29. Which of the following would not protect a teacher from being held accountable or liable for injuries to children under her/his care?

- a. Contributory negligence
- b. Assumption of risk
- c. Immunity
- d. Negligence

30. Which of the following practices or methods would be least desirable toward the learning of skills?
- Long practice periods over shorter lengths of time
  - Short practice periods over longer lengths of time
  - Repetition over and over until overlearning takes place
  - Practice with as small groups as possible
31. What psychological method is not a recommended procedure for teaching physical skills?
- Immediate positive feedback and reinforcement
  - Delayed positive feedback and reinforcement
  - Immediate criticism of what was wrong

Section II - Choose the BEST answer from all possible answers:

32. What should be the basis for selecting activities for a physical education program?
- Available equipment and facilities
  - Desires of the children
  - Needs and characteristics of the children
  - Understanding and expertise of the teacher
33. What is one of the latest concepts concerning the importance of physical education in the young child's life?
- Physical fitness
  - Physical skills
  - Social competence
  - Success for all children
34. What general educational theory is also a modern-day philosophy in the teaching of elementary school physical education?
- Lead from simple to complex knowledge
  - Lead from the known to the unknown
  - Improvement of total development
  - Introduce a broader range of opportunity
35. What is the greater cause of poor posture for young children?
- Fatigue
  - Tight clothing
  - Weak musculature
  - Poor habits

36. What is a more "normal" postural deviation for the primary aged child?
- Toeing in
  - Flat back
  - Exaggerated lumbar curve
  - Curvature of the spine
37. What is the most prominent "abnormal" deviation for the school aged child calling for immediate attention?
- Scoliosis
  - Rounded shoulders
  - Exaggerated lumbar curve
  - Protruding abdominal area
38. What is the basic theory underlying movement education that makes its approach different from movement exploration?
- Body to mind education
  - Mind to body education
  - Educated muscles and nerves
  - Quality of movement
39. Which of the following aspects of movement should be stressed first over all others for upper level children?
- Quality in movement
  - Quantity of movement
  - Speed in movement
  - Power in movement
40. Based upon the evidence available, there is an association between perceptual-motor competency and which of the following subject areas?
- Arithmetic
  - Reading
  - Music
  - Art

APPENDIX E

Test Scores and Accumulative  
Grade Point Averages

Test Scores and Accumulative  
Grade Point Averages

<u>Laboratory</u>		<u>Classroom</u>	
<u>Score</u>	<u>QCA</u>	<u>Score</u>	<u>QCA</u>
17	2.01	21	2.20
27	3.35	19	2.25
27	3.45	21	2.08
23	2.13	24	2.58
22	1.95	24	2.32
23	3.26	17	1.79
22	2.90	26	3.09
21	2.46	23	1.93
25	2.33	22	2.05
25	3.07	19	1.96
27	4.00	23	1.81
27	2.96	19	1.30
21	3.53	26	2.62
27	2.45	22	3.09
21	2.64	28	1.65
22	2.92	24	2.02
23	3.11	20	2.26
28	3.43		
22	2.75		
25	1.87		
26	3.20		
21	2.39		
26	1.60		
20	2.45		
21	2.29		
15	2.28		

## VITA

Miss Nancy Ann Barksdale Andrews, daughter of Dorothy and E. Richard Andrews, was born in Roanoke, Virginia, on February 20, 1937. All public school education was received in Roanoke, Virginia, with a high school diploma being earned at Jefferson Senior High School in 1955.

The B.S. degree was received from Longwood College in 1959 where Miss Andrews was elected to Who's Who Among Students in American Universities and Colleges during that same year.

Upon graduation from college, three years (1959-1962), were spent teaching at Andrew Lewis High School in Salem, Virginia. Upon receiving a teaching assistantship with the Health, Physical Education and Recreation Department at the University of Tennessee in Knoxville, Miss Andrews entered the graduate studies program and completed the M.S. degree there in 1963. The final requirement for the M.S. degree was the completion of the thesis, THE COMPARISON OF COLLEGE FRESHMEN WOMEN WITH HIGH AND LOW SCORES IN MOTOR ABILITY AND PHYSICAL FITNESS. The following three years, 1963-1966, were spent with a full-time teaching position at the University of Tennessee in Physical Education with the rank of Instructor.

During 1966, a return was made to Longwood College as an Assistant Professor in the Health and Physical Education Department. A leave of absence and grant were received from Longwood College during the 1970-71 school year while full-time graduate studies were

undertaken in Physical Education at the University of North Carolina in Greensboro.

The next five school years from 1971 until 1976 were spent teaching full time at Longwood College. At the completion of this time, Miss Andrews received a leave of absence and grant from Longwood College, a Virginia Iota State scholarship from Delta Kappa Gamma Society International, and a teaching assistantship from the Health and Physical Education Department at Virginia Polytechnic Institute and State University, Blacksburg, Virginia, where the Ed.D. was completed in May of 1978. Miss Andrews has since remained on the full time teaching staff at Longwood College in Farmville, Virginia.

*Nancy A. Andrews*

AN INVESTIGATION OF TWO TEACHING APPROACHES IN  
ELEMENTARY SCHOOL PHYSICAL EDUCATION  
COLLEGE METHODS COURSES

by

Nancy Ann Andrews

(ABSTRACT)

The purpose of this investigation was to obtain evidence which would reveal probable conclusions concerning the relative effectiveness of two different approaches of teaching elementary school physical education methods classes to college level elementary classroom majors. The two approaches which were studied were the laboratory-activity method and the lecture-discussion method.

The subjects for the investigation consisted of fifteen seniors, nine juniors and two sophomores for the laboratory-activity section. Six seniors, seven juniors and four sophomores were included within the lecture-discussion section. The study was conducted at Longwood College in Farmville, Virginia, during the first semester of the 1977-78 school year. Both classes were taught by the same instructor with identical course outlines, objectives, assignments and textbooks.

An information sheet, constructed by the investigator, was completed by each student in both sample sections in order to eliminate those subjects who had received past experiences and/or training in working with children. In order to measure the differences in knowledge and understanding of the elementary school physical education



following the courses of study, a short answer test, consisting of forty multiple choice questions was administered to both classes on the last day of instruction. The Kuder-Richardson formula 20 was utilized in establishing the reliability coefficient of the multiple choice test.

Student math and verbal scores of the Standardized Achievement Test for college entrance and accumulative grade point averages were used in order to reveal any characteristics which might indicate any possible differences in learning ability between the two classes. Multivariate analysis of variance revealed that there was a significant difference between the two classes at the .05 level due to differences in the accumulative grade point averages only. The accumulative grade point average was used as the covariate and the test scores as the dependent variable when running the analysis of covariance. When comparing the slopes between the two classes, the test showed no significant difference. Since the covariant was significant, the adjusted treatment means also revealed no significant difference.

Within the limitations of this investigation, the following conclusions were drawn:

1. No significant differences in short answer test scores were revealed between the lecture-discussion and the laboratory-activity approaches to teaching college level methods courses in elementary school physical education as stated in the original hypothesis.
2. There was no indication which solely supported one teaching style over the other when investigating the lecture-discussion

approach vs. the laboratory-activity approach to elementary school physical education methods classes on the college level.

It was recommended that a stronger research design might involve the following:

1. Random assignment of subjects or treatments to groups.
2. Combinations of teaching styles.
3. The use of a control group.
4. Matching student learning styles with teaching styles.
5. The use of additional testing instruments.
6. The use of validated testing instruments.